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ABSTRACT

Quantitative measurements help with understanding the mechanics involved and the role of philosophy in legislative actions. Identification of the key factors and the sequence of decisions is a basic approach to the mechanics of state funding of public higher education. Charts are used to graphically illustrate the relationships and individual state values. Factors involved in state appropriated support are: (1) state tax capacity (the potential taxes per capita measured by the representative tax system developed by the Advisory Commission on Intergovernmental Relations); (2) state tax effort (the percent of tax capacity actually collected); (3) the allocation/enrollment ratio (representing the state budget priority given to public higher education relative to the student enrollment load); and (4) tuition revenues that augment appropriations to equal total support per student. The data for the included charts are presented in table 1. The charts are scatter diagrams for the states and the District of Columbia. The five charts present the following: state appropriations per full-time equivalent student versus tax capacity; the state positions for the relationship of tax effort, tax capacity, and the resulting product of collected revenues; the state positions for the ratio of budget allocation rate to student enrollment load versus tax revenues collected; state positions for the appropriation/tuition relationship; and the final level of total support per student for public institutions relative to initial state tax capacity. (SM)

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STATE TAX CAPACITY AND FUNDING OF PUBLIC HIGHER EDUCATION

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STATE TAX CAPACITY AND FUNDING OF PUBLIC HIGHER EDUCATION

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Because a state's philosophy toward public services is involved, it is impossible to fully explain and justify support levels exclusively with quantitative measurements. However, such measures are useful in understanding the mechanics involved and the role of philosophy in legislative actions. A basic approach to the mechanics of state funding of public higher education is identification of the key factors and the sequence of decisions. Charts are used here to graphically illustrate the relationships and individual state values.

Factors Involved in State Appropriated Support

1. State tax capacity is the potential taxes per capita measured by the "representative tax system" developed by the Advisory Commission on Intergovernmental Relations. This system applies national average tax rates for the various types of taxes to the level of related state economic activity. Both state and local government taxes are included.

2. State tax effort is the percent of tax capacity actually collected. Tax effort depends on a state's fiscal precedents and philosophy regarding the need for tax support of public services.

The product of tax capacity multiplied by effort equals collected tax revenues per capita, which represents the actual tax wealth available to support public services.

3. The "allocation/enrollment ratio" represents the state budget priority given to public higher education relative to the student enrollment load. The numerator of the ratio is the percent of state tax revenues allocated to public higher education. The denominator is full-time-equivalent (FTE) public enrollment per capita. The combination of budget share and student load together with tax wealth determines the level of unit appropriations per student, i.e., ratio x tax revenues = appropriations per student. The ratio then suggests a state's commitment to support public higher education relative to its enrollment load and available resources.

4. Tuition revenues augment appropriations to equal total support per student. The level of tuition is dependent on a state's philosophy regarding the balance of educational returns to the individual versus state citizens, state policy in providing price access, and the degree to which appropriations require supplementation to equal the quality level sought.

State Patterns and Interrelationships of Variables

The data for charts 1 - 5 are presented in table 1. Tax data are for 1985, reported in Measuring State Fiscal Capacity, 1987 Edition, ACIR. Appropriations and tuition data are for

1986-87, reported in State Profiles: Financing Public Higher Education, 1978 to 1987, Research Associates of Washington.

The charts are scatter diagrams for the states and the District of Columbia, excluding Alaska because of deviant tax data. Appropriations are from state and local governments for current educational & general operations excluding appropriations for research, medical schools and centers, and agriculture. The appropriations thus primarily relate to student instruction and related academic and institutional supporting activities.

Chart 1 presents state appropriations per FTE student versus tax capacity. Potentially rich states tend to fund public higher education slightly higher than low capacity states, but with so many exceptions, low capacity is not a good excuse for poor funding. History, philosophy, and intent are more important in establishing support than is inherent funding capacity.

Chart 2 shows the state positions for the relationship of tax effort, tax capacity, and the resulting product of collected revenues. Again there is a slight positive correlation, i.e., potentially rich states tend to tax at higher rates than potentially poor states. However, again the great variance suggests that a state's philosophy regarding the need to provide and support public services is paramount.

Chart 3 shows state positions for the ratio of budget allocation rate to student enrollment load versus tax revenues collected. The product of the two variables is appropriations per student. States with low tax revenues tend to give greater priority to higher education by allocating a proportionately larger share of their tax budget relative to their public enrollment. They "catch up" in this way. Thus almost two-thirds of the states, exhibiting a wide range of tax revenues, appropriate between $3,000 to $4,000 per student in support of public higher education. This ratio then is the critical determinant in establishing state level financing of public higher education.

Chart 4 shows state positions for the appropriation--tuition relationship. States with very high appropriations tend to set low student charges. States with low appropriations have a wide range of tuition levels suggesting substantial differences in the philosophy of who benefits and should pay, the intent to provide price access, and the education quality level sought.

Chart 5 illustrates the final level of total support (appropriations plus tuition) per student for public institutions relative to initial state tax capacity. While inherent tax capacity has some affect on final funding it is not a dominant factor. In particular, note the range of total support from $3,800 to $9,500 per FTE student for states with tax capacity between $1,500 and $1,800 per capita.

The views represent only those of the author and not USDE.

Table 1. State and local government taxes, 1985, and public higher education appropriations and tuition, 1986-87.

STATE	1985 TAX CAPACITY Per capita (1)	Index	TAX EFFORT Index (2)	TAX REVENUES COLLECTED (1)x(2) Per capita (3)	Index	ALLOCATION RATE Percent (4)	ENROLLMENT FTE students per 1,000 population (5)	ALLOCATION RATE/ ENROLLMENT PER CAPITA (4)/(5) Ratio (6)	Index	APPROPRIATIONS PER FTE STUDENT (3)x(6) Amount (7)	Index	TUITION PER FTE STUDENT Amount (8)	Index	APPROPRIATIONS + TUITION PER STUDENT (7)+(8) Amount (9)	Index
ALABAMA	$1,057	75.1	87.4	$924	66	11.3%	34.6	3.25	118	$3,005	78	$1,027	88	$4,032	80
ALASKA	$3,648	259.1	128.4	$4,683	333	5.7%	27.2	2.08	76	$9,743	252	$1,255	108	$10,998	218
ARIZONA	$1,393	98.9	96.5	$1,343	95	10.1%	37.3	2.71	99	$3,638	94	$929	80	$4,568	91
ARKANSAS	$1,039	73.8	91.3	$949	67	8.7%	24.1	3.62	132	$3,438	89	$1,051	90	$4,489	89
CALIFORNIA	$1,692	120.2	93.5	$1,582	112	10.8%	36.7	2.95	107	$4,667	121	$497	43	$5,164	103
COLORADO	$1,663	118.1	84.6	$1,406	100	6.7%	35.3	1.90	69	$2,673	69	$1,826	157	$4,499	89
CONNECTICUT	$1,783	126.6	98.9	$1,764	125	5.4%	18.5	2.92	106	$5,158	133	$1,367	118	$6,525	130
DELMARE	$1,733	123.1	79.6	$1,379	98	10.7%	34.4	3.13	114	$4,314	111	$2,924	251	$7,238	144
DIST COLUMBIA	$1,725	122.5	137.7	$2,376	169	4.6%	12.5	3.67	133	$8,719	225	$811	70	$9,530	189
FLORIDA	$1,452	103.2	75.9	$1,103	78	6.7%	23.4	2.85	104	$3,147	81	$779	67	$3,926	78
GEOGRIA	$1,272	90.3	89.9	$1,144	81	8.1%	21.1	3.83	139	$4,387	113	$1,289	111	$5,676	113
HAMAII	$1,653	117.4	98.9	$1,635	116	13.0%	26.9	4.82	175	$7,876	203	$636	55	$8,512	169
IDAHO	$1,100	78.1	90.3	$993	71	12.3%	30.8	4.00	146	$3,974	103	$611	53	$4,585	91
ILLINOIS	$1,356	96.3	106.4	$1,443	102	7.5%	30.4	2.47	90	$3,567	92	$846	73	$4,413	88
INDIANA	$1,224	86.9	95.6	$1,170	83	8.5%	27.6	3.08	112	$3,601	93	$1,757	151	$5,358	106
IOWA	$1,186	84.2	111.8	$1,326	94	8.9%	33.0	2.69	98	$3,561	92	$1,574	135	$5,135	102
KANSAS	$1,389	98.6	96.0	$1,332	95	9.2%	37.6	2.44	89	$3,253	84	$1,115	96	$4,368	87
KENTUCKY	$1,101	78.2	86.6	$953	68	9.2%	24.4	3.79	138	$3,611	93	$1,209	104	$4,820	96
LOUISIANA	$1,362	96.7	92.6	$1,261	90	6.2%	26.3	2.34	85	$2,956	76	$1,403	121	$4,359	87
MAINE	$1,256	89.2	104.0	$1,306	93	7.7%	22.5	3.44	125	$4,497	116	$1,521	131	$6,018	120
MARYLAND	$1,471	104.5	100.9	$1,484	105	7.7%	32.5	2.36	86	$3,495	90	$1,460	126	$4,955	98
MASSACHUSETTS	$1,587	112.7	106.3	$1,687	120	6.3%	21.4	2.95	107	$4,978	129	$1,431	123	$6,409	127
MICHIGAN	$1,325	94.1	120.4	$1,596	113	8.0%	35.3	2.28	83	$3,631	94	$1,880	162	$5,511	109
MINNESOTA	$1,427	101.3	118.9	$1,697	121	8.7%	38.3	2.27	83	$3,854	100	$1,148	99	$5,002	99
MISSISSIPPI	$972	69.1	93.0	$904	64	9.6%	32.4	2.97	108	$2,684	69	$1,314	113	$3,998	79
MISSOURI	$1,274	90.5	83.9	$1,068	76	8.1%	25.8	3.15	114	$3,359	87	$1,356	117	$4,715	94
MONTANA	$1,273	90.4	106.6	$1,356	96	8.0%	32.6	2.45	89	$3,323	86	$928	80	$4,251	84
NEBRASKA	$1,318	93.6	92.9	$1,224	87	7.6%	35.4	2.15	78	$2,628	68	$1,109	95	$3,737	74
NEVADA	$2,054	145.9	63.8	$1,309	93	7.2%	22.9	3.15	115	$4,122	106	$1,080	93	$5,202	103
NEW HAMPSHIRE	$1,578	112.0	64.7	$1,020	72	5.2%	21.4	2.42	88	$2,464	64	$3,170	273	$5,634	112
NEW JERSEY	$1,646	116.9	104.6	$1,722	122	5.8%	19.3	3.00	109	$5,163	133	$1,677	144	$6,840	136
NEW MEXICO	$1,392	98.9	86.2	$1,199	85	11.4%	33.2	3.44	125	$4,129	107	$724	62	$4,853	96
NEW YORK	$1,420	100.8	155.9	$2,214	157	6.3%	23.8	2.64	96	$5,852	151	$1,048	90	$6,900	137
NORTH CAROLINA	$1,213	86.1	92.7	$1,125	80	13.1%	38.2	3.41	124	$3,841	99	$614	53	$4,455	88
NORTH DAKOTA	$1,429	101.5	92.0	$1,315	93	10.6%	44.3	2.39	87	$3,145	81	$1,235	106	$4,380	87
OHIO	$1,277	90.7	102.6	$1,310	93	7.1%	28.9	2.44	89	$3,194	83	$1,725	148	$4,919	98
OKLAHOMA	$1,478	105.0	84.4	$1,248	89	7.2%	34.8	2.07	75	$2,586	67	$640	55	$3,226	64
OREGON	$1,332	94.6	101.4	$1,350	96	9.1%	34.7	2.62	95	$3,531	91	$1,211	104	$4,742	94
PENNSYLVANIA	$1,258	89.3	102.4	$1,289	92	6.3%	21.2	2.97	108	$3,825	99	$2,371	204	$6,196	123
RHODE ISLAND	$1,236	87.8	118.0	$1,459	104	7.6%	28.3	2.67	97	$3,893	101	$1,598	137	$5,491	109
SOUTH CAROLINA	$1,082	76.8	95.1	$1,029	73	10.6%	24.1	4.38	159	$4,509	116	$1,541	133	$6,050	120
SOUTH DAKOTA	$1,157	82.2	86.8	$1,004	71	6.5%	25.1	2.59	94	$2,601	67	$1,163	100	$3,764	75
TENNESSEE	$1,173	83.3	81.9	$960	68	11.0%	23.8	4.64	169	$4,453	115	$1,376	118	$5,829	116
TEXAS	$1,563	111.0	76.1	$1,190	85	8.1%	31.9	2.55	93	$3,231	78	$821	71	$3,852	77
UTAH	$1,136	80.7	108.9	$1,238	88	10.6%	33.8	3.12	114	$3,867	100	$1,076	93	$4,943	98
VERMONT	$1,368	97.2	92.8	$1,270	90	4.3%	26.5	1.62	59	$2,063	53	$4,622	397	$6,685	133
VIRGINIA	$1,376	97.7	86.5	$1,190	85	10.0%	32.3	3.09	112	$3,672	95	$1,483	128	$5,155	102
WASHINGTON	$1,421	100.9	94.9	$1,349	96	9.0%	34.1	2.63	96	$3,550	92	$1,021	88	$4,571	91
WEST VIRGINIA	$1,086	77.1	102.6	$1,114	79	7.1%	27.0	2.63	96	$2,926	76	$1,143	98	$4,069	81
WISCONSIN	$1,246	88.5	127.5	$1,590	113	9.0%	39.5	2.27	83	$3,609	93	$1,558	134	$5,167	103
WYOMING	$2,380	169.1	108.0	$2,570	183	8.9%	33.3	2.65	97	$6,826	176	$794	68	$7,620	151
UNITED STATES	$1,408	100.0	100.0	$1,408	100	8.2%	29.6	2.75	100	$3,871	100	$1,163	100	$5,034	100

Chart 1

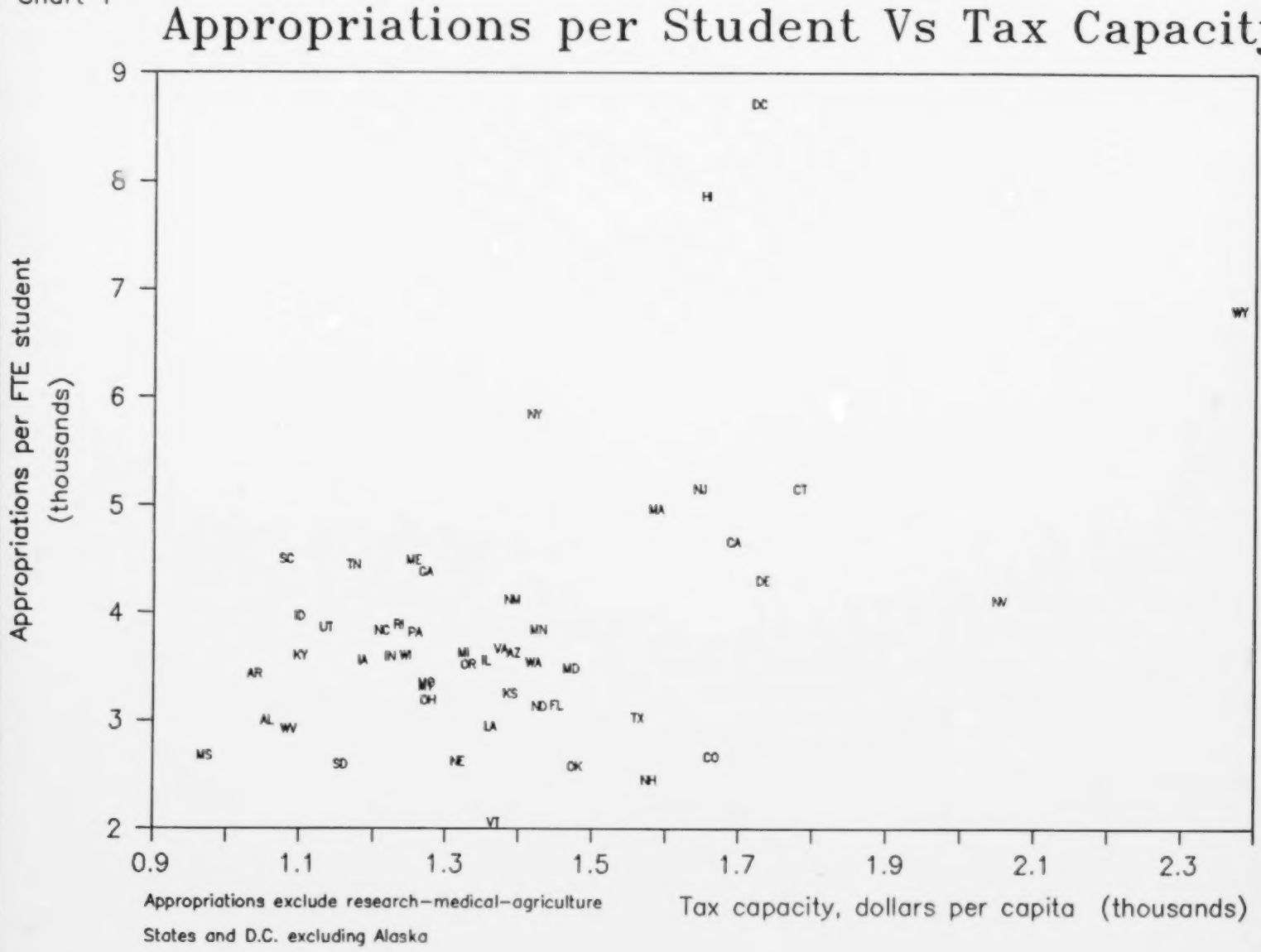

Appropriations per Student Vs Tax Capacity
Appropriations per FTE student (thousands)
9
8
7
6
5
4
3
2
0.9
1.1
1.3
1.5
1.7
1.9
2.1
2.3
Tax capacity, dollars per capita (thousands)
DC
HI
WY
NY
NJ
CT
MA
CA
DE
NV
SC
TN
ME
CA
NM
ID
UT
NC
RI
PA
MN
KY
IA
IN
WI
MI
OR
IL
VA
AZ
WA
MD
AR
MO
OH
KS
ND
FL
AL
WV
LA
TX
MS
SD
NE
OK
CO
NH
VT
Appropriations exclude research–medical–agriculture
States and D.C. excluding Alaska

Chart 2

Tax Effort, Capacity, and Collected Revenues

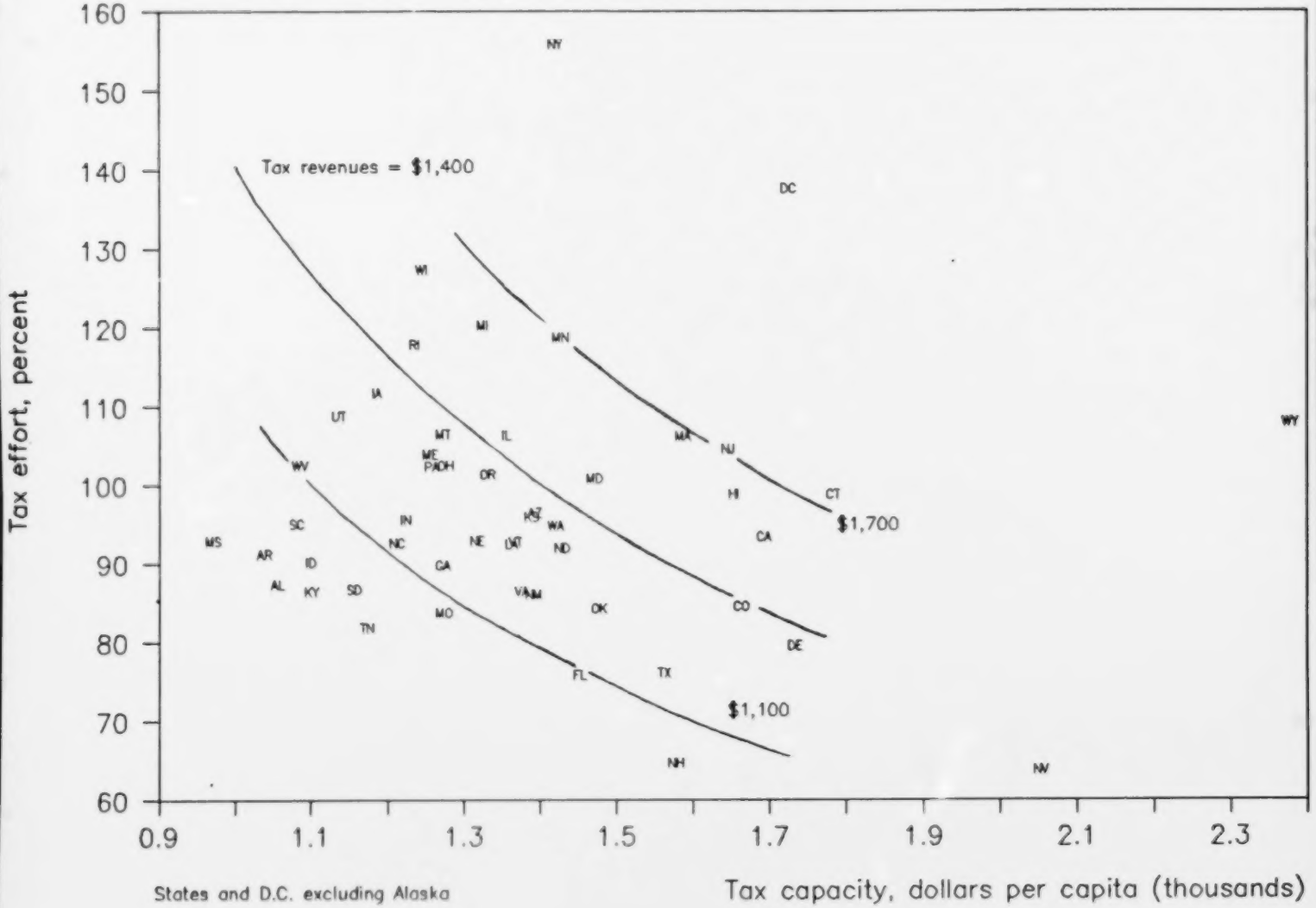
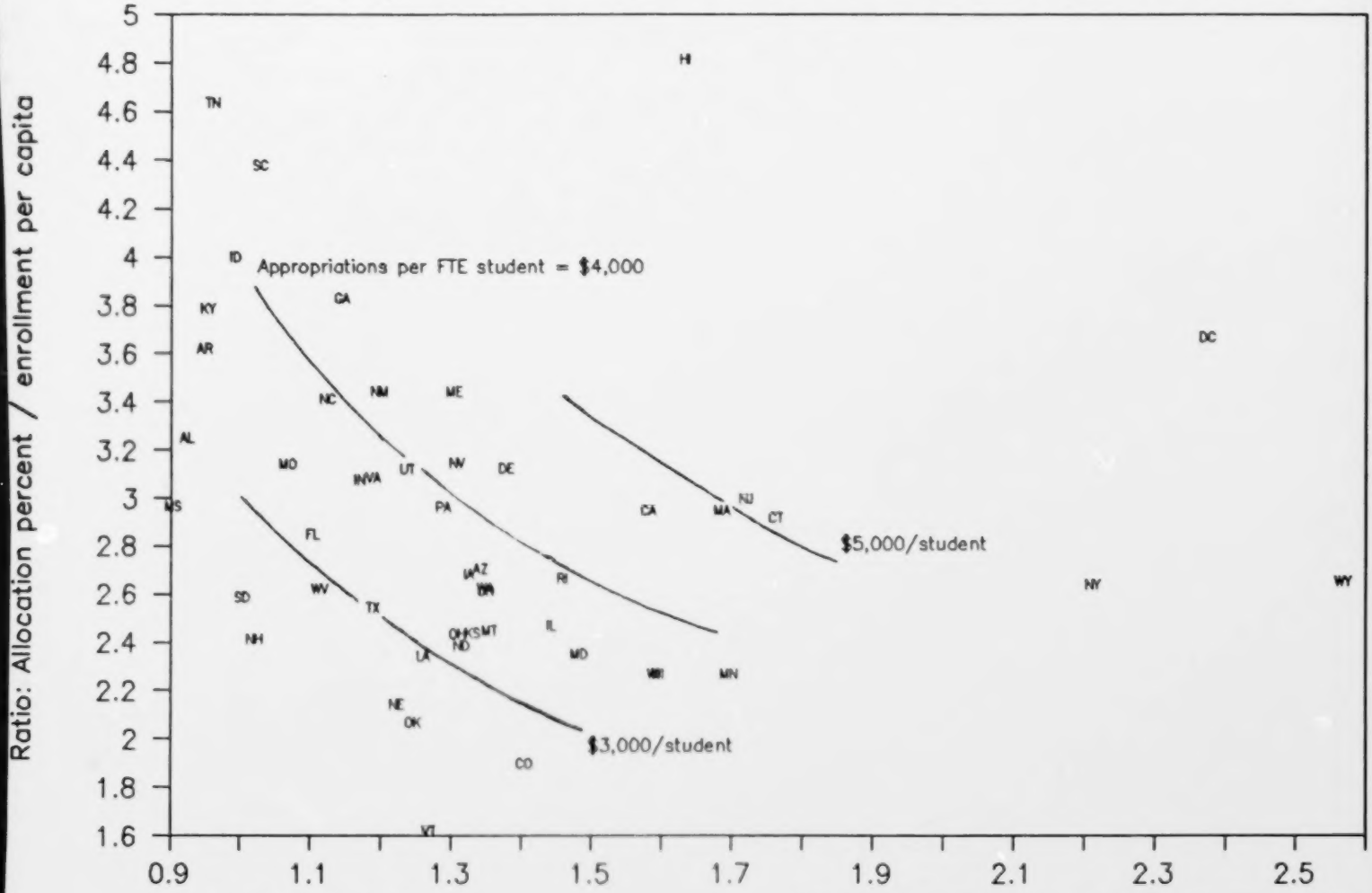


Chart 3

Allocation/Enrollment Ratio Vs Tax Revenues



States and D.C. excluding Alaska
Allocation rate is the percent of tax revenues appropriated for public higher education.

Chart 4

Tuition Vs Appropriations per FTE student

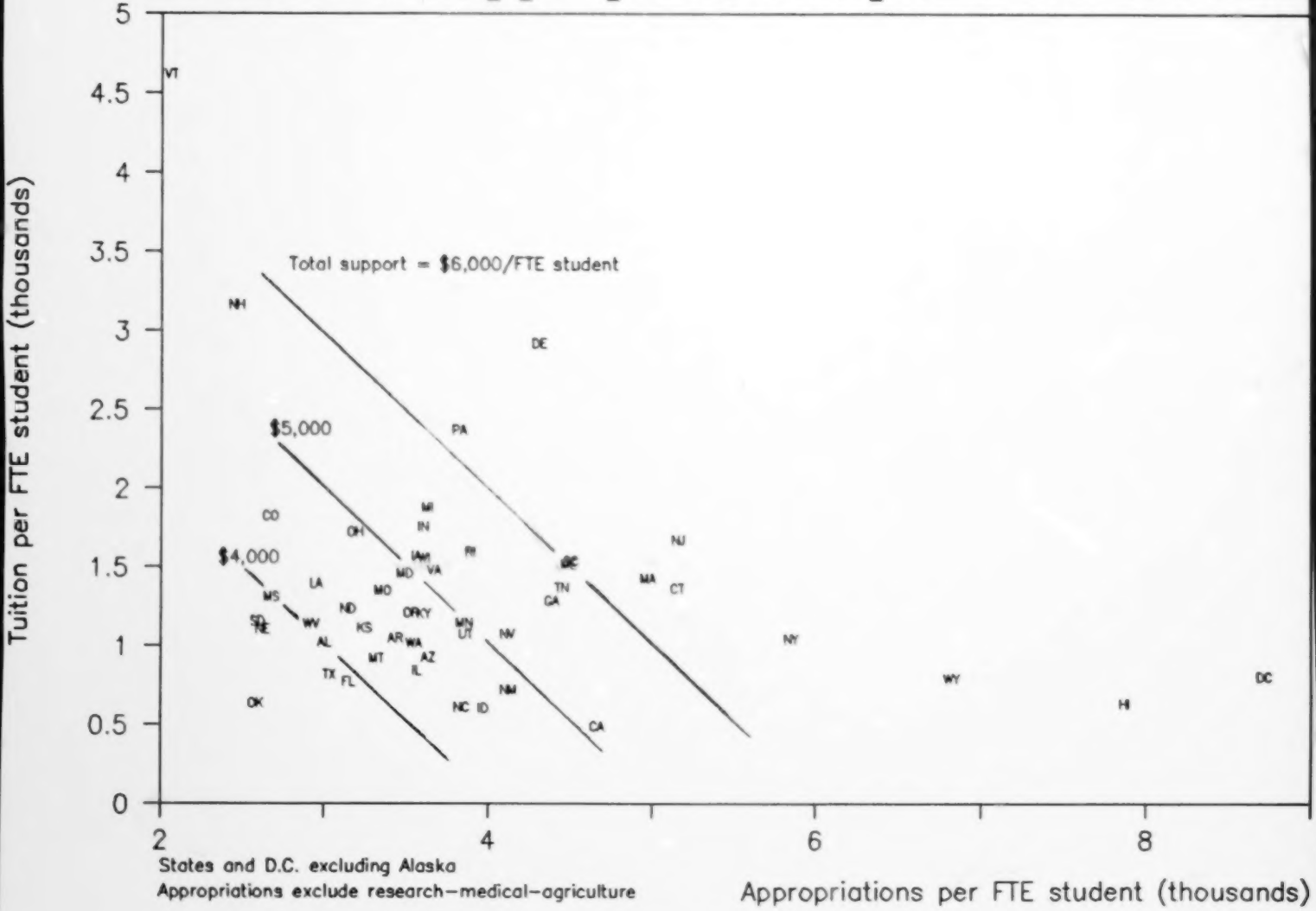
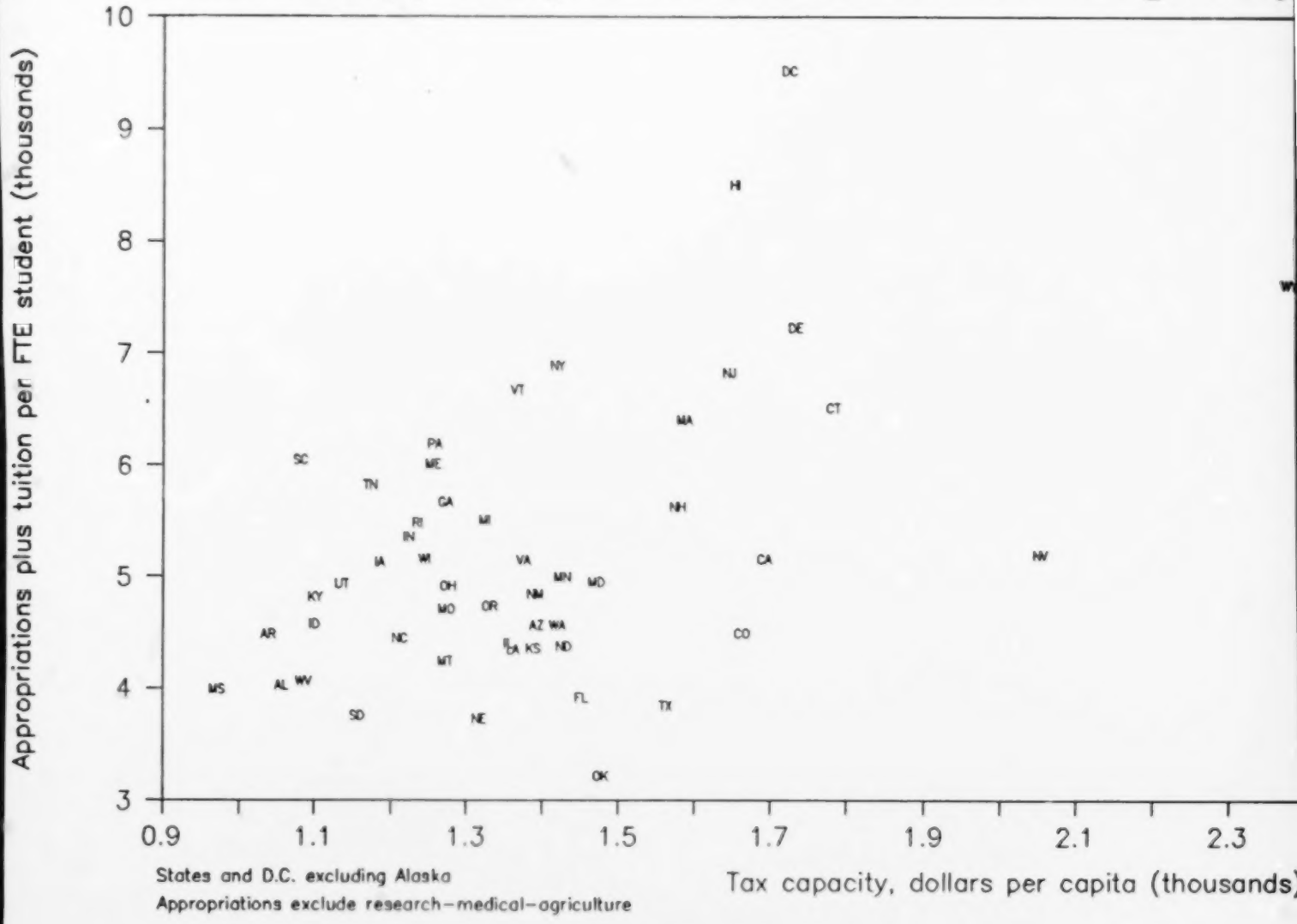


Chart 5

Total Support per Student VS Tax Capacity



States and D.C. excluding Alaska

Appropriations exclude research-medical-agriculture